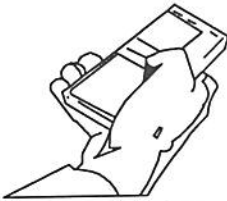


Adaptive Computing: Challenging the Myth of Disability



By Claudia Lynch, *Benchmarks* Editor (BITNET: AS04@UNTVM1)

Adaptive computing is a term that refers to the application of adaptive technology to personal computers so that they can be used by people with visual, hearing, and/or motor impairments.¹ These adaptations include synthesized speech for the blind, telecommunications devices for the deaf, and voice recognition and other control devices for the motor impaired. Equipped with these devices, personal computers have become liberators of the disabled, providing them with "a new life of independence, creativity, and productivity."²

More than 40 million people in the United States have some type of disability. Additionally, more than 750 million disabled persons can be found in other parts of the world.³ These numbers keep growing, due to advances in medical technology, in many cases, but also due to other factors such as war, malnutrition, and insidious disease. "Furthermore, out of every seven disabled people alive today, six were not born that way. Eighty-five percent of people who have a disability today acquired it after birth, which is why disabled activists frequently refer to you and me as TABs — Temporarily Able Bodied individuals."⁴

On July 26, 1990, President Bush signed into law The Americans with Disabilities Act (ADA).⁵ This law has four major focal points, employment, public services, public accommodations and telecommunications. It has been described as the most comprehensive civil rights legislation ever enacted by the U.S. Congress. The computer industry is now required to make its equipment accessible to the disabled if it wants to sell its wares to the federal government. With this added incentive, it

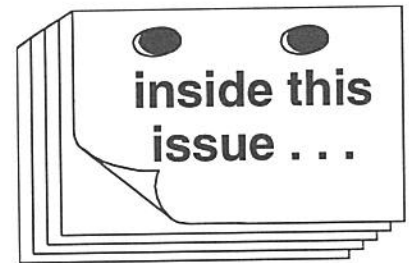
¹ The inspiration for the title of this article comes from an article by Alan Brightman that appeared in the *EDUCOM Review*, Volume 24, Number 4, Winter 1989, pp: 17-23. It was titled "Challenging the Myth of Disability."

² "An Electronic Bill of Rights for the Disabled," by Kenneth M. Sheldon, *BYTE*, August 1991, pg. 6.

³ "Worldwide, one percent of populations are profoundly deaf. Ten percent are classed as hearing impaired," according to the article "Hong Kong ITWeek targets the deaf" in the February 8 1991 issue of *Newsbytes*.

⁴ "Challenging the Myth of Disability," by Alan Brightman, *EDUCOM Review*, Volume 24, Number 4, Winter 1989, pg. 8.

⁵ Also known as Public Law 101-336.



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SERVICES AVAILABLE TO USERS OF THE UNT COMPUTING FACILITIES

The UNT Computing Center is located in the Information Sciences Building (ISB), Room 119. Phone Numbers:

Computing Center: (817) 565-2324

ISB 110 Lab: (817) 565-3048

Network/Micro (817) 565-2316,

Services: (817) 565-2319

ISB I/O Area: (817) 565-3890

BA I/O Area: (817) 565-2350

All personnel listed below can be contacted either by calling the Computing Center or by sending them electronic mail on VM/CMS (USER-IDs follow each name. All IDs are on BITNET node UNTVM1).

Benchmarks - Claudia Lynch (AS04)

Information & ID-Codes; Disk Space Problems, Passwords - Pam Summers

Statistical/Research Support - George Morrow (AS01), Panu Sittiwong (PANU), Phanit Laosirirat (AC44), James Yarbrough (AC35)

Academic ADABAS/COM-LETE - Cathy Hardy (AC55)

CRSP & COMPUSTAT Problems - Panu Sittiwong (PANU), Phanit Laosirirat (AC44)

Student Programming Problems - CSCI Dept.: GAB Room 550; BCIS Dept.: BA Room 152

Problems with JCL, Operating Systems - ISB 110 Lab

Communication/Terminal Problems - Network/Micro Svcs.

Data Entry; Test Scoring & Analysis - Betty Grise

Administrative Applications - Coy Hoggard

Printout Retrieval - ISB or BA I/O Operators

General Access Computer Labs - ISB 110, Chilton Hall 255, GAB 330 & 550, Business 330 & 332, Matthews 309, ISB 205A, Willis Library 134, Wooten Hall 120



DIALING-UP UNT COMPUTERS OVER THE TELEPHONE

Phone numbers for accessing UNT computing systems:

300-2400 BAUD: (817) 565-3300

300/1200 BAUD: (817) 565-3499

300-9600 BAUD: (817) 565-3461

300-2400 BAUD: D/FW METRO 792-4140

Area code 214 must dial 817 before the METRO #.

Set Data Bits to 7, Parity to S, and Stop Bits to 1. The autobaud feature requires you to hit the <RETURN> key repeatedly after the connection is made so that the receiving modem can determine the baud rate. When you see the prompt (# for non-metro numbers, UNTModems> for the metro lines) you can enter one of the following commands to connect with the system of your choice.

Metro Lines UNTModems>	Non-Metro Lines #	System
N/A	CALL 8040	MUSIC/SP (line editing and PCWS)
Connect VM3270	CALL 3270	Academic Mainframe Full Screen (MUSIC, CMS Academic COM-LETE)
Connect DEC	CALL DEC	VAX cluster (VMS)
Connect Sol	CALL 900	Solbourne (UNIX)
Connect Ponder	CALL 780	Sequent (Ponder)
Connect Library	CALL 3000	UNT Libraries' on-line card catalog.

To exit from the local phone lines, press <ESCAPE><RETURN>, and type DONE (at the # prompt), then press <RETURN> <RETURN>. To exit from the metro lines, press <CTRL><SHIFT><6>, then type DISCONNECT (at the UNTModems> prompt), then press <RETURN>.

HOURS FOR UNIVERSITY OF NORTH TEXAS COMPUTER ACCESS AREAS : Spring 1992*

Day of Week	Willis Library Lab	ACS Lab	General Access Labs: See above left for locations.
Monday - Thursday	Open 24 hours a day	7:30 a.m. to Midnight	8 a.m. to 10 p.m.
Friday	Open 24 hours	7:30 a.m. to 9 p.m.	8 a.m. to 5 p.m.
Saturday	Open 24 hours	9 a.m. to 9 p.m.	10 a.m. to 5 p.m.
Sunday	Open 24 hours	1 p.m. to Midnight	1 p.m. to 10 p.m.

*Hours may vary. Check MUSIC/SP, VM, CMS, VAX or Solbourne NEWS and/or posted schedules for exceptions

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Continued from page 1.

is no doubt that a plethora of adaptive devices barely even dreamed of today will be forthcoming in the next decade.

According to an article in *Information Week*, "some 70 percent of the 30 million disabled Americans who are not confined to institutions are unemployed."⁶ In many cases, these people are often fully qualified for a number of jobs involving the use of desktop computers, but are not considered for the jobs because employers fear the cost of adapting the computers to the individual's disability. In most cases, this is unfounded. In fact, "studies indicate that the average cost to an employer for accommodating someone with a handicap is usually less than \$1,000."⁷

The School of Community Service here at UNT has recently established an Adaptive Computer Lab. The article on page 5 details the current contents of the lab and plans for the lab in the future. As stated in the article, the long-term goal at UNT is to have adaptive equipment and software available in all computer labs.

If you are interested in adaptive computing technology, a partial list of adaptive products is listed on this page. Additional resources are also contained in the list.

⁶ "Enabling the disabled: simple computer adaptations are often all that is needed," by John J. Xenakis, *Information Week*, January 28, 1991, Number 305, pg. 38.

⁷ "A wider work force by computer: adding a voice or obeying a nod, today's programs can help the disabled hold a job," by Glenn Rifkin, *The New York Times*, December 16, 1990, Volume 40, pg. F11.

Product and Other Information

- **American Foundation for the Blind, Inc.** — Offers a variety of services for blind and visually impaired persons. (212) 620-2000.

- **American Occupational Therapy Association** — A nationwide organization of professionals concerned with occupational therapy. (301) 948-9626.

- **Apple Computer Inc. National Special Education Alliance** — Approximately 50 resource centers share information via Applelink through this alliance. Apple also offers a Hypercard stack, called the Solutions database, describing assistive devices for the Mac.

Apple Computer Office of Special Education
20525 Mariani Ave., Mail Stop 43S
Cupertino, CA 95014
(408) 974-7910
(408) 974-7911 (TDD)

- **Braille 'n Speak** — A pocket talking computer with speech hardware and software built into the unit and a braille keyboard.

Blazie Engineering
3660 Mill Green Rd.
Street, MD 21154
(301) 879-4944

- **Cintex** — An IBM PC-compatible software system that provides the severely disabled with the ability to control a variety of devices via a PC.

NanoPac Inc.
4833 South Sheridan Rd., Suite 402
Tulsa, OK 74145-5728
(918) 665-0329

- **Center for Computer Assistance to the Disabled (C-CAD)** — Provides computer training and job placement. (817) 640-6613.

- **Center for Technology in Human Disabilities** — Promotes use of computers to enable disabled individuals to become more independent at home, school and work. (301) 338-8273.

- **Closing the Gap** — A monthly publication focusing on technological

advances as they can be applied to help in the fields of rehabilitation, special education, and assisting the disabled.

Closing the Gap
P.O. Box 68
Henderson, MN 56044
VOICE: (612) 248-3294 FAX: (612) 248-3810

- **Computer-Disability News** — A quarterly publication on computer resources for the disabled.

The National Easter Seal Society
70 East Lake St.
Chicago, IL 60601
(312) 667-7400

- **Co-Net** — A cooperative electronic network established to distribute information relating to rehabilitative and assistive technology. This information is developed into software that can be distributed on disk, tape, or CD ROM. HyperAbleData is a desktop version of the AbleData database, which contains 16,000 things to help the physically and mentally challenged; HyperTracebase is a desktop version of information resources compiled by the Trace R&D Center. MAC and IBM versions of the databases are available.

Trace R&D Center
1500 Highland Ave.
Madison, WI 53705
(608) 263-5865

- **Doors** — A new product line intended to open the Macintosh to users with disabilities. The products comprise both hardware and software.

Madenta Communications Inc.
No. 216 Advanced Technology Center
9650 20th Ave.
Edmonton, Alberta, Canada T6N 1G1
(403) 450-8926

- **Easter Seal Systems** — Sponsors grants for software development for disabled persons. Provides education and training. (312) 243-8400.

- **Educational and "special assistance" software** — available via anonymous ftp from wsmr-simtel20.army.mil or its mirror site wuarchive.wustl.edu (directories: msdos.education, msdos.handicap).

- **Foundation for Children with Learning Disabilities** — Publishes "The FCLD Learning Disabilities Resource Guide.

FCLD
99 Park Ave.
New York, NY 10016
(212) 687-7211

- **Grolier Electronic Encyclopedia, Microsoft Bookshelf** — Adaptive versions of these CD-ROMs come with an audiocassette manual as well as configuration files for speech-access systems.

Talking Computer Systems
12 Riverside St., Suite 1-3
Watertown, MA 02172
(617) 926-1919

- **HandiShift, HandiWord, SeeBeep** — HandiShift is a DOS based sticky-key program that makes the Shift, Control, or Alt key a toggle. HandiWord is word-prediction software that "guesses" what word you are trying to type. SeeBeep is a DOS-based memory-resident utility that produces a visual signal whenever the computer's speaker beeps.

Microsystems Software, Inc.
600 Worcester Rd., Suite 4A
Framingham, MA 01701
(508) 626-8511

- **HeadMaster** — A "point-and-shoot" device that allows motor-disabled people who can move their heads to use the headset to emulate a Macintosh mouse.

Prentke Romich Co.
1022 Heyl Rd.
Wooster, OH 44691
(800) 642-8255

- **IBM National Support Center for People With Disabilities** — Provides information about specific products as well as information about support groups around the country. IBM also has a Special Needs Forum on CompuServe. Type GO IBMSPEC at any CompuServe prompt to access the forum.

P.O. Box C-1030
Atlanta, GA 30055
(800) 426-2133 (Voice or TDD)
(404) 238-4806 (TDD)

- **Job Accommodation Network (JAN)** — A service of the Presi-

dent's Committee on Employment of People with Disabilities, JAN is an information Network and consulting resource, providing employers information on obtaining adaptive equipment and information on computer accommodation.

West Virginia University
Job Accommodation Network
809 Allen Hall
P.O. Box 6122
Morgantown, WV 26507-9984
(800) 562-7234

- **Job Acquisition with Speech (JAWS)** — A DOS-based screen reader, JAWS can drive a multitude of synthesizers and has sophisticated programmable features. It can be programmed to read any color on the screen and can define regions of the screen as verbally inactive.

Henter-Joyce
7901 Fourth St. N, Suite 211
St. Petersburg, FL 33702
(800) 969-5658

- **Ke:nx** — An interface that allows users with physical impairments to use specialized input devices with their Macintoshes.

Don Johnson Developmental Equipment Inc.
P.O. Box 639
1000 N. Rand Road, Building 115
Wauconda, IL 60084
VOICE: (800) 999-4660 FAX: (708) 526-4177

- **KeyBraille** — KeyBraille is a paperless braille terminal that can be connected to a DOS-based PC via a parallel interface cable.

HumanWare, Inc.
6245 King Rd.
Loomis, CA 95650
(916) 652-7253

- **King Keyboard, PC Mini Keyboard** — King Keyboard is a large adaptive keyboard that plugs into the standard PC keyboard socket. PC Mini Keyboard is a miniature keyboard, useful for a person to use one-handed or with a typing stick.

Technical Aids and Systems for the Handicapped, Inc. (TASH)
70 Gibson Dr., Suite 12
Markham, Ontario, Canada L3R4C2
(416) 475-2212

- **Kurzweil Personal Reader** — Performs optical character recognition (OCR) on printed material.

Kurzweil Computer Products
185 Albany St.
Cambridge, MA 02139
(617) 893-1515 or 864-4700

- **National Institute for Rehabilitation Engineering (NIRE)** — Information and referral center for disabled persons seeking rehabilitation with the help of technology. (201) 838-2500.

- **National Organization on Disability (NOD)** — Offers information and referral services to all disabled individuals. (202) 293-5968.

- **OutSpoken** — OutSpoken is a screen reader for the Macintosh that can be programmed to verbalize icons, pull-down menus, and dialog boxes. It drives the built-in Macintosh speech chip directly.

Berkley Systems, Inc.
1700 Shattuck Ave.
Berkeley, CA 94709
(415) 540-5535

- **Personal Computer Opportunities for the Handicapped** — Dedicated to helping disabled individuals acquire job skills and jobs with personal computers, also produces a newsletter. (612) 796-5765.

- **The Reactive Keyboard** — A FREE text editor and text predictor. Versions are available for UNIX, IBM PC, and Macintosh via anonymous ftp from cs-sun-fsa.ucalgary.ca (136.159.2.1).

- **Rehabilitation Research Center** — Nonprofit facility for research, education and training in rehabilitation methods, techniques, and systems for the physically and mentally impaired. (313) 853-1830

- **MindReader** - Word-prediction software that "guesses" what word you're trying to type.

Brown Bag Software
2155 South Bascom Ave., Suite 114

Campbell, CA 95008
(408) 559-4545

- **Monologue for Windows** — Will read words presented in text-based applications. Requires an external speech accessory speaker.

First Byte
Santa Ana, California
VOICE: (714) 432-2740 FAX: (714) 432-7057

- **Navigator, VERT, Vista** — Navigator is a paperless braille terminal. The hardware and software can interface with any DOS-based computer via the RS-232C serial port. VERT (verbal emulation in real time) comes with text-to-speech screen-reading software and a half-size PC-compatible plug-in circuit card. Vista is a hardware-based large-print processor. It can enlarge graphics as well as text.

TeleSensory Corp.
455 North Bernardo
Mountain View, CA 94043
(800) 227-8418

- **ProBraille Talking Translator, ProTerm Talking Terminal Program, ProWords Talking Word Processor.**

MicroTalk
337 South Peterson Ave.
Louisville, KY 40206
(502) 897-2705

- **Qwerty Large Print, Qwerty Word Processor** — Qwerty Large Print is a software-based screen-enlargement program that is compatible with Hercules-style video boards.

HFK Software, Inc.
68 Wells Rd.
Lincoln, MA 01773
(617) 259-0059

- **SIGCAPH** — The ACM special interest group (SIG) on computers and the physically handicapped. Publishes the *SIGCAPH Newsletter*.

Association for Computing Machinery
11 West 42nd Street
New York, NY 10036
PHONE: (212) 869-7440
FAX: (212) 944-1318
BITNET: ACMHELP@ACMVM

Please see ADAPT on page 6.

UNT's Adaptive Computer Lab

By Susan Pierce, Computer Systems Manager, School of Community Services (Internet: pierce@scs.chilton.unt.edu)

The School of Community Service (SCS) has established an Adaptive Computer Lab, a general access computer lab to be equipped and staffed to meet the specific needs of UNT students with disabilities. Opened in November 1991, the lab is located in Chilton Hall 116, next to SCS' Center for Rehabilitation Studies. The facility is on the ground floor and has wheelchair-accessible entrances from the outside and the inside of Chilton Hall.

The Adaptive Lab was built using funds (\$30,000) set aside from the 1990-91 student computer service fees to purchase adaptive computer equipment and software. At first, the adaptive equipment and software was to be placed in one of the existing general access computer labs, but SCS asked and was given permission to build an additional lab in Chilton Hall. Although the goal is to have adaptive equipment and software available in all computer labs, there were several reasons to start this process by building a separate lab. First, we believed that the use of adaptive hardware and software might require additional training for lab monitors and technical support personnel. The lab will also serve as a place where the Office of Disability Accommodation (ODA) can conduct proctoring and testing; tasks that might be facilitated by adaptive computer equipment and software. Finally, we wanted to build a place where we could demonstrate this kind of technology to everyone.

The Adaptive Computer Lab is a general access lab and, as such, is subject to the same policies and procedures as all general access labs, plus a few additional rules. For one, any UNT student may use the Adaptive Lab, but a student registered with ODA is given priority to use a computer which is adapted for his/her disability. Also, in hiring lab monitors, applicants with a major in Rehabilitation Studies or other related areas are given preference for the job.

So far, our list of adaptive equipment and software includes:

- *Kurzweil Personal Reader* - Performs Optical Character Recognition (OCR) on printed material. The Kurzweil reads most serif and sans serif fonts in a wide range of point sizes.
- *Romeo Braille* - Prints text in braille form.
- *Speech Synthesizers* - We currently have two of these. One, a DECTalk card, has features which enable the user to vary the pitch, rate, and voice "character" of the speech.
- *Business Vision* - A program that converts text on the computer screen to speech.
- *Business FOCUS* - A program that magnifies the text or graphics screens up to ten times original size.
- *Vert Plus* - Performs the same function as Business Vision.

We chose to start with IBM-compatible microcomputer hardware, and purchased two 386 models, complete with Super VGA displays and extra memory. The lab also acquired four older-model IBM-compatibles and a postscript laser printer. All lab computers are connected to the UNT local area network and have access to all Novell file servers in UNT's general access labs. As in the other general access labs, the networking of lab computers enables access to the other UNT academic computer systems (VAX, Solbourne, etc.), as well as to computer systems across the world which are connected to networks such as the Internet, BITNET, etc. Students who

are registered with Office of Disability Accommodation can also access the Adaptive Lab (and hence, the world!) from a home computer via telephone modem. This might be especially helpful when a student's home computer is already equipped with adaptive hardware or software. Two Macintosh IIfx computers are on order. Each will have extra memory, a color monitor, hard drive, and SuperDrives (which read and write to DOS-formatted diskettes). One Macintosh will have a CD-ROM drive.

Obviously, most of our efforts so far deal with visual disabilities — both blindness and low vision. We hope next to concentrate on learning disabilities. We've only just scratched the surface in purchasing adaptive equipment and software. For the time being, our plan is to purchase first whatever is necessary to meet the needs of our current student population. We also have adopted a strategy to do whatever we can using software instead of hardware, since software, in general, is less expensive. Ideally, whatever services we can provide in the lab ought to be cost-effectively duplicated in the home and/or office.

We have a lot to learn and a long way to go. Some issues, such as availability of documentation and how to "adapt" for the more sophisticated UNIX platforms, have yet to be addressed. We are gathering information on adaptive technology; everyone is welcome to come and explore with us. Of course, we're open to any suggestions. We plan to host an Open House in late January, 1992 — hope to see you there. ■

ADAPT continued from page 5.

- **SIGTEAL** — An ACM special interest group (subset of SIGCAPH) focusing on the need to make CD-ROM data accessible to visually impaired users. Contact: Tom Dennison (703) 379-2842.
- **SM85** — a dual Baudot/ASCII modem designed to work from any standard RS-232C serial port. It can function as a TDD communications system and also interface with more widespread BBSs and information utilities.
Krown Research, Inc.
10371 West Jefferson Blvd.
Culver City, CA 90232
(800) 833-4968
- **Storer Computer Access Center** — provides such services as orientation to available alternative access systems, applications-oriented system assessment, technical consultation, and engineering support. (216) 791-8118.
- **Training: The Magazine of Human Resource Development** (612) 333-0471.
- **Voice Scribe Systems** - Voice-recognition products.
Dragon Systems, Inc.
Chapel Bridge Park
90 Bridge St.
Newton, MA 02158
(617) 965-5200
- **ZoomText** — A large-print software package that is compatible with EGA and VGA systems.
AI Squared
1463 Hearst Dr.
Atlanta, GA 30319
(404) 233-7065

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alt.education.disabled —
USENET newsgroup.

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Gunde, Michael G., "What every librarian should know about the Americans with Disabilities Act," *American Libraries*, September 1991, Volume 22, Number 8, pp: 806-809.

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McManus, Neil, "Ke:nx interface aids disabled users," *MacWeek*, April 9, 1991, Volume 5, Number 14, pg. 11.

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Office of Disability Accommodation Helps UNT Students

By Claudia Lynch, *Benchmarks* Editor
(BITNET: AS04@UNTVM1)

The Office of Disability Accommodation (ODA) is located in Suite 318 of the University Union. It serves as a liaison for students in need of special assistance or accommodation to access UNT's educational programs and facilities. Some services offered are: copies of class notes; adaptive equipment; mobility orientation; scheduling, class access & registration assistance.

The ODA also produces faculty-oriented pamphlets about each type of disability and a newsletter, *The Advocate*. For more information or assistance, contact the ODA at P.O. Box 5356, Denton, TX 76203 (817) 565-4323. ■

EDUCOM's Project EASI: A Computing and Disability Resource for Higher Education

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Project EASI is dedicated to assisting higher education in developing computer support services for people with disabilities.

A project of EDUCOM's Educational Uses of Information (EUIT) Program, EASI provides information and guidance on campus applications of adaptive computer technology for access to information resources, instruction, research and employment.

EASI's membership includes professionals from throughout the United States, Canada and other countries.

EASI Projects and Work Groups

- EASI Seminars
- Speakers Bureau Working Group
- Outreach and Referral Working Group
- On-line Resource Working Group
- Legislation and Policy Work Group

EASI Publications

The following publications can be obtained from:

Ruth Holder
EUIT Program
EDUCOM 1112 16th Street, Suite 600
Washington, DC 20036
(202) 872-4200
BITNET: euit@educom

- "Computers and Students with Disabilities: New Challenges for Higher Education."
- "EASI Fixes"

EASI Contacts

Danny Hilton-Chalfen, chair
Carmela Castoria, EASI editor

UCLA Office of Academic Computing
5628 MSA, 405 Hilgard Avenue
Los Angeles, California
PHONE: (213) 206-4839, 206-7133
TDD: (213) 206-5155
FAX: (213) 206-1700
BITNET: CSMIDHC@UCLAMVS (Danny)
BITNET: CSMICLC@UCLAMVS (Carmela) ■

IRC Adopts Supported Computer Items List

By Ms. Susan Pierce, Chair, IRC De Facto Standards Subcommittee (Internet: pierce@scs.chilton.unt.edu) and Dr. Philip Baczewski, Acting Director of Academic Computing Services (BITNET: AC12@UNTVM1)

At its regularly scheduled November 1991 meeting, the Information Resources Council (IRC) officially adopted the Supported Computing Items List (SCIL) in accordance with the University's Computing and Data Communications Resource Acquisition Policy. The SCIL indicates levels of support for the computing and networking hardware and software directly supported by Academic Computing Services and Network and Microcomputer Services divisions of the Computing Center as well as the computing hardware supported by the Microcomputer Maintenance Shop. A copy of the SCIL may be obtained from the Computing Center Offices (ISB 119) or the Microcomputer Maintenance Shop (GAB 527).

The SCIL has existed in a draft version since the Computing and Data Communications Resource Acquisition Policy was first adopted in 1989. It has been maintained and updated by the Computing Center and Microcomputer Maintenance Shop during that time, but until recently, was never officially endorsed by the Information Resources Council. This official version of the SCIL was updated and finalized by a subcommittee of the Information Resources Council. This revision was compiled after discussing each supported item with the supporting organizations, namely Academic Computing Services, Network and Microcomputer Services, and the Microcomputer Maintenance Shop.

The list, as it is distributed today, represents the items which are supported *currently*, given existing budgets, staff, and space. The list may not necessarily reflect what *should* be supported, and it is not intended to serve as the only source of hardware and software purchase recommendations. It is always advisable to contact the Computing Center and/or the Microcomputer Maintenance Shop before making computer-related purchases.

Now that an official SCIL has been adopted, we can begin the process of revising and improving it. Many of our computing goals have already been set forth in documents such as college-wide plans and UNT's Information Resources Strategic Plan. The next step is to call upon our computing experts — not only the staff in our official support organizations, but people from all areas of the University — to translate into specific hardware and software brands, policies and procedures, whatever is necessary to achieve those goals. In several areas, this process is already taking place (e.g., the Electronic Mail Task Force, college-wide computing committees). It is from the recommendations of these groups that the SCIL should be amended.

The following highlights from the Computing and Data Communications Resource Acquisition Policy may shed more light on the purpose for the SCIL and the procedures for revising it:

3.2.1. The SCIL indicates the sources and levels of advice, assistance, training and maintenance provided for each item. The SCIL indicates the level of support by the university but is not intended to imply or express that any item should or should not be purchased. However, if a computing resource is required that does not appear on the list, consultation may still be requested by the purchaser in order to help them acquire the most appropriate computing resource;

3.2.2. Additions and/or changes may be made at any time under the following conditions:

3.2.2.1. Additions and/or changes may be proposed by Microcomputer Maintenance Shop (MMS) or Computing Center.

3.2.2.2. Requests for additions and/or changes may be submitted by persons outside the MMS or Computing Center as long as they are submitted in writing to the MMS and/or Computing Center.

3.2.2.3. When any additions and/or changes are proposed, these changes will be announced to the Information Resources Council (IRC). If the IRC has no objections, the change may be made.

3.2.2.4. If a request for an addition or change is denied, an appeal may be submitted in writing to the IRC for further consideration.

...

3.3. For specialized computing resources which are not included on the aforementioned SCIL, acquisition consultation is encouraged and maintenance will be provided if practical; however, it will generally be necessary for the purchaser to specify, order, and make arrangements for installation, training, troubleshooting, and maintenance.

Please note that additions can be suggested by Microcomputer Maintenance Shop or Computing Center or forwarded *in writing* by faculty, staff, departments, colleges, etc. at any time. In actuality, this procedure and the SCIL has been in place for several years, but it seems few people knew of their existence. Hopefully, greater awareness of the SCIL and the procedure for amending the SCIL will help improve the planning and support of computing at UNT. ■



Information Resources Council News

Minutes provided by Sue Harrison, Recording Secretary

Information Resources Council Members: Philip Baczewski, Computing Center (ex-officio); Dave Barker, TCOM - Physiology; Cengiz Capan, College of Business; Carolyn Cunningham, Financial Aid; Stephen Farish, College of Music; Paul Fisher, Computer Sciences; Frank Forney, TCOM - Academic Computing; Chuck Fuller, Business Services; Don Grose, UNT Libraries; Richard Harris, Computing Center (ex-officio); Tom Newell, Telecommunications; Don Palermo, Admissions; Sue Pierce, School of Community Services; Paul Schlieve, Computer Education & Cognitive Systems; John Todd, Political Science; Ray Vondran, Library and Information Science (Chair); Sue Harrison, Computing Center (Recording Secretary).

November 19, 1991 Meeting

The Information Resources Council met on Tuesday, November 19, 1991 for a Planning Retreat led by Henry Hayes, Assoc. Dean of the College of Business. Hayes presented an overview of planning and involved the group in discussion of methods and elements of planning processes. Participants specifically worked on establishing the groundwork for preparation of short-range as well as long-range plans for the Information Resources Council. The Council laid the foundation for the revision of its charge and its long-range plans by discussing the strengths, weaknesses, opportunities and threats to the Council and its mission.

Following the retreat, a short business meeting was held and the Council conducted items of business that are briefly summarized here:

The report of the subcommittee on the High Speed Communications Backbone, presented by Bill Buntain was discussed, with Buntain explaining that the plan, which was begun last year, is to continue to wire the campus with a fiber optic backbone as well as to wire individual buildings for linking to the backbone. The building wiring portion of the plan is not included in this particular report and was put into a separate document in order to simplify the project reporting process. Board of Regents approval has been given for the backbone portion of the project. The building wiring portion of the project report is being prepared and will be submitted to the IRC at a later date.

A motion was made and passed to approve the High Speed Communications Backbone subcommittee's report with an urging to the Information Resources Steering Committee that they release \$130,000 in this fiscal year toward the total funding of the building wiring.

The Supported Computing Items List (SCIL), prepared by the Defacto Standards Committee, was presented for approval (see page 8 for more information). After discussion, the SCIL was approved.

Two new ex-officio members, Jim Curry and Bill Buntain, were named to the Council.

December 10, 1991 Meeting

The Information Resources Council met on Tuesday, December 10, 1991, and conducted items of business which are briefly summarized here:

Bill Buntain distributed excerpts from an "Internal Building Wiring" report prepared by the Task Force on Communications Networks which contained a proposed list of criteria upon which to prioritize building wiring projects, as well as a proposed "Wiring Request Form." Paul Schlieve and Bill Buntain asked for input from council members concerning factors to be considered in making decisions about which building projects to proceed with first.

In the discussion that followed, it was noted that some departments may not have funds for wiring and/or support; it was suggested that someone should communicate to the various departments to find out what their needs are. Some departments may have the money to do the building wiring but do not have internal support and staff to make it work. Therefore, if a department wants the wiring and is willing and able to give support to the use of the wiring after it is put in, then that department should be given priority.

Paul Schlieve and Sue Pierce identified ongoing support as the most critical factor in successful wiring projects. It was pointed out that the reason for prioritizing the projects is so that the list can be presented to the Information Resources Steering Committee for their approval and allocation of funds. Cengiz Capan urged the committee to proceed with all of the building wiring projects as soon as possible, perhaps funding the wiring itself from central funds, and letting departments pick up the costs for communication concentrator cards as they are needed.

The "Wiring Request Form" was discussed; some changes were suggested which will be taken into consideration by the Task Force before the form is sent out to departments. Information

gained from these forms, when returned, would then be used to compile a prioritized list of projects, based on the criteria previously discussed.

Cengiz Capan, reporting for the General Access Lab Managers Committee, stated that the committee has decided to split the Policies and Procedures document it is preparing for General Access Labs, into two documents. GALPAC will assume responsibility for the Policy document and GALMAC will continue to work on the Procedures document. They hope to bring a report to the IRC at its next meeting.

Paul Schlieve reported that the E-Mail Committee has looked at several e-mail software packages and has ranked them in order, according to their overall potential for use by the University. The Committee will be looking at test systems from the first three choices right away. While the evaluations are going on, the campus will have WordPerfect Office Mail and Pegasus Mail available for use. He also announced that Mike Murdock, previously a Programmer for the Voice Response Team, has been hired as the new E-Mail Analyst. ■

The Weather Underground: One More Time

By Claudia Lynch, *Benchmarks* Editor
(BITNET: AS04@UNTVM1)

The article on page 8 of the November/December 1991 issue of *Benchmarks*, left out an important line of information in the directions for accessing the University of Michigan Weather Underground. Following are the complete instructions:

To access the Weather Underground from a UNT host computer (VAX, Solbourne, VM/CMS) type:

telnet hermes.merit.edu or
telnet 35.148.150

At the "Which Host" prompt type:
um-weather ■

CARL/UnCover Comes to North Texas

By Cynthia Koepp, *Benchmarks* Assistant Editor (BITNET: AC03@UNTVAX)

UnCover is the name of a database maintained by the Colorado Alliance of Research Libraries (CARL). This database is new to UNT, and presently we are one of the few participating institutions outside Colorado.

Lucky for us! CARL/UnCover gives us access to the contents of more than 10,600 periodicals—or close to 2,500,000 articles. Since the periodical's table of contents is entered into the database upon receipt, coverage is from 1988 to the *present*. The daily additions enable CARL/UnCover to be kept more current than printed indexes or other databases. Another nice feature is that the periodicals featured are multi-disciplinary—the database contains the holdings of various institutions in Colorado—public libraries, university libraries, and special libraries.

Right now, there is one CARL/UnCover terminal in the Willis Library, first floor, near the reference desk. There will be another access point in the ISB this spring. The list of periodicals indexed by CARL/UnCover is kept at the reference desk, and our library staff has marked the ones that UNT receives. (UNT also has holdings not listed in CARL/UnCover.) If our libraries don't carry the periodical you need, you might want to check the AHE Union list to see if it's available at a nearby library, before you consider the fax option (more about this in a bit).

One way to benefit from CARL/UnCover would be to just use the searches (name, word or browse) to see what is out there on your topic. Should you find an article you want that UNT doesn't have, instead of using interlibrary loan, now you can use CARL/UnCover to order the article. Orders may be placed using MasterCard, VISA, or through a deposit account. (Account forms are at the reference desk.) You can have your order sent to the UNT library's fax machine, or faxed to a more convenient location. The average cost to fax an article is \$8.00—with science journal articles running a little higher. If you use the UNT fax machine (fax no. 817-565-2599), there is a service charge of \$1.00 for the first 20 pages and 10 cents per page after that. The turnaround time is within 24 hours (Monday to Friday, 8:00 a.m. to 5:00 p.m., MST). Certain articles are marked "1 Hour" articles; their turnaround is immediate.

A CARL/UnCover Help Sheet is available at the reference desk. You will find concise instructions on using the system. There is also an evaluation form next to the terminal; the UNT library wants to know what you think.

I thought that CARL/UnCover was easy to use, but not always easy to follow, because the system worked so slowly. I became impatient waiting. (As a computer novice, I am used to lagging behind the computer, not vice versa.) That's my only complaint. To this point, there has not been much demand for CARL/UnCover. There is a sign-up sheet next to the terminal if you would like to make an appointment. I think that it's an excellent service, and I know that I'll be back!

*Editor's note: CARL is available via the Internet. To access CARL from a UNT host computer (VAX, Solbourne, VM/CMS) type: **telnet pac.carl.org** or **telnet 192.54.81.128** Special arrangements must be made with the Colorado Alliance of Research Libraries to access the UnCover portion of CARL. For more information contact CARL at 777 Grant St., Suite 306, Denver, CO 80203 VOICE: 303-861-5319 FAX: 303-830-0103, or send an Internet mail message to **help@carl.org** ■*

Computing Center Staff Activities

By Claudia Lynch, Benchmarks Editor (BITNET: AS04@UNTVM1)

Awards

The following Computing Center employees received awards at the Service Recognition Awards ceremony on December 11, 1991:

- Bill Buntain — 5 years of service.
- Mike Maner — 10 years of service.
- Don Butler — 15 years of service.
- Steve Minnis — 20 years of service.
- Don Swatloski — 20 years of service.

Transitions

We have had some new employees join our staff this past semester and some leave. Following is a list of those employees, their full or part-time status (FT or PT) and the area of the Computing Center in which they work or worked. This list does not include employees who have already been mentioned in previous issues of *Benchmarks* during the fall semester.

New Employees

- Joe Anaya (FT) — Administrative Computing: Database & Central Programming.
- William Belcher (FT) — Mainframe Technical Services: Programmer/Analyst.
- Melanie Bullock (FT) — Production Services: Data Entry Operator.
- Nevin Ellis (FT) — Mainframe Technical Services: Programmer/Analyst.
- John Hooper (FT) — Administrative Computing: HRMIS Team Leader.
- Brad Kelly (PT) — Production Services: Job Distribution Assistant.
- Girish Mantry (PT) — Academic Computing Services: ISB 110 Lab Consultant.
- Patrick South (FT) — Network and Microcomputer Services: Programmer/Analyst.

Employee Resignations

- Lee Oldham (PT) — Computer Operations: I/O consultant
- Lee Ann Smith (FT) — Mainframe Technical Services: Programmer/Analyst.

Other Activities

In Academic Computing Services, **Billy Barron**, the VAX/UNIX System Manager, is continuing his publishing relationship with *Matrix News*. He reviewed Xcaret Research's netfind product for the November 1991 issue of *Matrix News* (Volume 1, No. 8). His article, "BBSing Around the Outernet," appeared in the October issue (Volume 1, No. 7). *Matrix News* is the corporate newsletter of Matrix Information & Directory Services. ■

USENET and the Information Explosion

By Billy Barron, VAX/UNIX Systems Manager (BITNET: BILLY@UNTVAX)

One of USENET's (and mailing lists in general) largest problems is that there is too much information available. This article will look at the problem and offer some suggestions with dealing with information overload.

The History

When USENET started back in 1979, it averaged about 60 messages per month. In September 1991, an estimated 120,109 messages were exchanged over USENET (news calculation post — tx.news.stats — BCM.TMC.EDU). With a little math, you can discover that if you wanted to read all the articles and never slept, you would still need to read about 3 messages per minute.

Also, the number of newsgroups has dramatically grown. As recently as 1988, only 381 newsgroups existed. Today, UNT takes 1123 newsgroups and more are out there (mostly regional groups).

The major reason for the increase is that more people have access to the network than ever before. At the same time, users who have long had network access are finally putting it to use. Many people believe that this growth cannot continue and that in the near future USENET will get out of control.

The Messages

I will categorize all messages in three groups from the user's perspective. First, there is noise. Noise is a message that is not useful to anyone. Some groups, such as alt.flame, comp.sys.amiga.advocacy, and alt.bizarre, are mostly noise. The second category is irrelevant signal. Irrelevant signal is a message which is useful to many people, but not to you personally.

Finally, there is relevant signal. Relevant signal is a message which is useful to you directly. In the perfect world, you would only see the relevant signal. Fortunately, methods by which the noise and irrelevant signal can be ignored are available.

First, carefully select which groups you read. For example, it would not make sense to read rec.tv.startrek if you do not like Star Trek. Secondly, use a menu driven news interface and do not read every message via commands like READ/NEW in ANU News. The menus allow you to pick and choose the messages you want to read. Use the collapse/thread option on your newsreader if you have it. The collapse option makes all the messages with the same subject a single menu item. This allows all the messages on that topic to be selected at once. Threads work in a similar fashion except that you specify at the end of a message that you wish to read the next message in the thread. Finally, use the kill feature, if available. Kill removes messages based on subject or poster so you are not even aware of their existence.

Let's cover how to use some of these features in the newsreaders we currently have at UNT. ANU News does not have a collapse feature available and unfortunately, the kill feature is next to useless. However, nn does much better on both counts. The collapse feature is enabled by editing the file ~/.nn/init and adding the lines:

```
set consolidated-manual
```

```
set consolidated-man
```

The kill option in nn is invoked by hitting <K> while in nn. Using this option is straightforward except for two cases. First, at the "(=)" prompt, almost always you will want /. The prompt after that says "(regexp)". Regexp means regular expression. I do not have room for a full description of regular expressions, but will cover enough to get you started. An example is `.*subscribe.*`. The `.*`'s mean any

Please see USENET on page 13.

The Network Connection



By Dr. Philip Baczewski, Acting Director of Academic Computing,
BITNET INFOREP (BITNET: AC12@UNTVMI)

*This column is a continuing feature of **Benchmarks** intended to present news and information on various aspects of wide area networks.*

Does BITNET Have a Future?

There has been some talk that BITNET will soon be a thing of the past. On some network mailing lists and discussion groups, people have been talking about dropping their BITNET memberships in favor of the Internet (or, more precisely, NSFNet the National Science Foundation Network which ultimately provides most educational institutions' Internet access). After all, the Internet has gateways to BITNET (or vice versa). Most BITNET services are available via E-mail. BITNET will be gone soon, right?

It depends on what you mean by soon. As long as there is a market for low-cost, academically-based wide area networking, BITNET has the chance to compete in that market. BITNET's dramatic growth in the last ten years or so is an indicator of just how valuable its services are. If we see a tremendous growth in the number of BITNET sites which also have NSFNet connections and all of those sites drop their BITNET memberships, then BITNET's demise, or at least, the loss of its place as one of the major academic networks may be hastened. The likelihood of that happening very quickly may not be that high. By a very unscientific count, as of September, only 40% of universities on BITNET were also on the Internet. By now, that number has probably grown, since connections to NSFNet are growing at a rapid pace. That pace may slow, however. One of the current challenges facing network service providers is to make NSFNet connections available to smaller institutions at a low cost, but at an effective speed. All of this is to say perhaps BITNET's not quite as obsolete as some might think it is.

The future of BITNET depends on how CREN (the Corporation for Research and Educational Networking), BITNET's governing organization, decides to position the network in the marketplace. Right now, the unattended file transfer and interactive messaging capabilities, and the sheer number of member institutions in the U.S. and the affiliated networks worldwide will sustain the usefulness of BITNET for some time (probably at least five years without any action on CREN's part). For example, if you are on the Internet and want to send to a BITNET-affiliate outside the U.S., you are probably going through a BITNET gateway. BITNET's value is not just the connectivity it brings within the U.S., but also the connectivity to numerous locations around the world (five continents and forty-six countries at last count).

CREN has recognized that the wide-area networking landscape is changing, and commissioned a document entitled "A Strategic Plan for CREN," prepared by Northeast Consulting Resources, Inc. The plan outlines five possible "endstates" for BITNET that range from just "declaring victory" and shutting down to competing in the IP networking market. (The strategic plan is available from LISTSERV@BITNIC as the file CREN PLAN9106.) The consulting firm recommended hiring an Executive Director to finalize and implement the strategic plan, an action which CREN is currently carrying forward.

Another factor in the future of BITNET is the BITNET II "project." BITNET II generically refers to the routing of RSCS networking traffic over IP networks. In this sense, a large portion of BITNET has already converted to BITNET II, since much of the traffic is routed over the NSFNet backbone. Individual institutions can convert to BITNET II as it becomes advantageous for them to do so, since the supporting VM software (VMNet) is available from Princeton University and the comparable VMS software (TCPNJE) is available from Joiner Software Inc. (At UNT, we are currently running TCPNJE for our BITNET connectivity to several other Texas nodes.) Expanding the use of BITNET II will undoubtedly allow the network to operate more efficiently (and thereby allow BITNET to compete more effectively), and could also lead to a day when BITNET is positioned to become an Internet service provider.

The bottom line is that while the future of BITNET is by no means certain, BITNET is also by no means dead. As newer networking technologies become available to a wider array of institutions, BITNET, under CREN's guidance, will have to adapt to meet the needs of its members or indeed will become a thing of the past. Personally, I think I'd miss BITNET, especially answering that age-old question, "how do I sign on to BITNET?" ■

USENET continued from pg. 12.

number of letters. Therefore, this line means kill all the messages that have any number of letters, the word subscribe (this feature is case-insensitive), and then are followed by any number of letters. This particular use of kill is extremely useful for getting rid of the noise of users who post a letter trying to subscribe to the group.

However, this is just half the battle. The other half is to reduce the amount of noise you generate. To begin with, do not post messages of the type "I think the Atari ST is the worst com-

puter on the face of the planet." Typically, this kind of post is totally worthless. However, if you **HAVE** to say that, give reasons why the Atari ST is a bad computer. Next, give the message an appropriate subject. Please make sure that the message is being posted in a relevant group. For example, a message about X windows is probably out of place in a group like soc.culture.vietnamese. If you must crosspost a message, please make sure that a Followup-To: header is in the message and points to only one group. This way all replies stay in one group. Reply directly to the poster of a message instead of replying to USENET unless your reply contains information of general inter-

est. The following final rule is probably the rule that is broken the most these days on the network. Please do not quote entire letters in your response. If you need to quote the letter you are replying to, delete most of the original letter and only keep the minimum amount possible to establish context.

Using all of these steps should not only reduce your information overload, but also reduce the load for other users on the network. Personally, I do not feel that USENET will collapse under its own weight, but users will need to be more sophisticated to get in and get the information in a reasonable amount of time. ■

List of the Month

Each month we will highlight one BITNET, Internet, or USENET Special Interest Group (SIG) mailing list. This month's list...

alt.education.disabled (USENET: VAX ANUNews or Solbourne nn)

Coordinator: Sri Ramkrishna (aru@mentor.cc.purdue.edu)

According to its charter, alt.education.disabled "... is for discussion of issues concerning education for people with disabilities, including both physical and mental disabilities. Both those with disabilities and others involved in or concerned with their education are encouraged to contribute to this group. Matters discussed might include access to facilities and the problems of people whose method of learning differs from that assumed in most schools."

If you have a VAX or Solbourne User-ID, you can read this USENET discussion list using either ANUNews on the VAX or nn on the Solbourne. ■



Academic Computing Services is offering the following short courses for the 1992 spring semester. Please pre-register to attend (a registration form can be found at the end of this issue). **A maximum of 10 people will be admitted to each of the courses held in ISB 110. A maximum of 8 people will be admitted to each of the courses held in ISB 123.** Academic Computing Services reserves the right to cancel ANY course that has 5 people or less registered 3 days before the date of the course.

PLEASE NOTE: Faculty and students have first priority to register for these classes. All people registering for hands-on (ISB 110) HDS, VAX and/or UNIX courses should have current USER-IDs. Applications for USER-IDs are available in the Computing Center main office (ISB 119).

HDS, VAX, AND UNIX COURSES

- 1. Introduction to IBM Job Control Language (JCL)** — A two-hour session to be held in the Academic Computing Conference Room (ISB 123):
 - Tuesday, February 11: 3-5 p.m. Instructor: George Morrow
- 2. Introduction to CMS** — Two two-hour sessions to be held in the Science Library (ACS General Access Lab, ISB 110):
 - Tuesday, January 28: 3:00-5:00 p.m. Instructor: James Yarbrough
 - Wednesday, February 19: 10:00 a.m.-Noon Instructor: Cathy Hardy
- 3. Introduction to VAX/VMS** — A two-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):
 - Tuesday, February 18: 3:00-5:00 p.m. Instructor: Staff
- 4. Introduction to UNIX** — A two-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):
 - Thursday, February 20: 3:00-5:00 p.m. Instructor: Marc St.-Gil
- 5. Introduction to vi** — A one-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):
 - Monday, February 24: 4:00-5:00 p.m. Instructor: Marc St.-Gil

STATISTICAL PACKAGE COURSES

- 1. Introduction to SAS** — A two-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):
 - Thursday, January 30: 2:00-4:00 p.m. Instructor: Panu Sittiwong
- 2. Introduction to SAS on CMS** — A one-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):
 - Tuesday, February 4: 3:00-4:00 p.m. Instructor: Panu Sittiwong
- 3. Introduction to SAS on UNIX** — A one-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):
 - Monday, February 17: 4:00-5:00 p.m. Instructor: Panu Sittiwong
- 4. Introduction to SAS PC** — A one-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):
 - Monday, February 10: 4:00-5:00 p.m. Instructor: Phanit Laosirirat
- 5. Introduction to SPSS** — A three-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):
 - Wednesday, February 5: 1:00-4:00 p.m. Instructor: James Yarbrough
- 6. Introduction to SPSS PC+** — A three-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):
 - Tuesday, February 13: 2:00-5:00 p.m. Instructor: Phanit Laosirirat

WIDE AREA NETWORK COURSES

1. **Introduction to BITNET** — Prior knowledge of at least one of the following interactive operating systems is required: CMS, MVS, VAX/VMS. A two-hour session, location to be announced:

- Monday, February 24:
3:00-5:00 p.m.
Instructor: Philip Baczewski

2. **Introduction to the Internet** — Prior knowledge of at least one of the following interactive operating systems is required: VAX/VMS, UNIX, MS-DOS, MAC. A one and a half-hour session, location to be announced:

- Tuesday, February 25:
3:30-5:00 p.m.
Instructor: Billy Barron

3. **Introduction to USENET** — Prior knowledge of at least one of the following interactive operating systems is required: VAX/VMS, UNIX, MS-DOS, MAC. A one-hour session to be held in the Computing Center Conference Room (ISB 123):

- Tuesday, February 13:
4:00-5:00 p.m.
Instructor: Billy Barron

MICROCOMPUTER COURSES

1. **Introduction to Microcomputer Labs** — Two one-hour sessions, to be held in the Science Library (ACS General Access Lab, ISB 110):

- Tuesday, January 28:
10:00-11:00 a.m.
Instructor: Eric Lipscomb
- Wednesday, January 29:
3:00-4:00 p.m.
Instructor: Eric Lipscomb

2. **Introduction to WordPerfect 5.1 for Students** — Prior knowledge of basic DOS commands required. Bring one 5 1/4" low density formatted diskette. If you are com-

fortable with WP 5.0 do not take this class. A three-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):

- Tuesday, February 11:
2:00-5:00 p.m.
Instructor: Sandy Franklin

3. **Introduction to Procomm Plus** — A one-hour session to be held in the Academic Computing Conference Room (ISB 123):

- Wednesday, February 5:
3:00-4:00 p.m.
Instructor: Eric Lipscomb

4. **Introduction to DOS for Students** — A two-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):

- Wednesday, February 12:
2:00-4:00 p.m.
Instructor: Eric Lipscomb

5. **Introduction to Macintosh for Students** — A two-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):

- Monday, February 3:
3:00-5:00 p.m.
Instructor: Eric Lipscomb ■

Calls For Papers, Conferences, And Other Items of Interest



We have received the following "calls" and announcements from various organizations.

Call for Papers

- **Student Session at the 30th Annual Meeting of the Association for Computational Linguistics, June 28 - July 2, 1992, University of Delaware** — All students must have ACL student membership status at the time of the conference. Deadline for submissions is **February 10, 1992**. For more information, contact: Lenhart Schubert (ACL Student Session), University of Rochester, Computer Science Department, Rochester, NY 14627-0226 (Internet: schubert@cs.rochester.edu).

- **5th Irish Conference on Artificial Intelligence and Cognitive Science, September 10-11, 1992, University of Limerick, Ireland** — Submissions from abroad are particularly welcome, and assistance with travel costs may be available for a small number of participants. Topics of interest include: application & theory of expert systems, human-computer interaction & knowledge representation. Deadline for submissions is **April 24, 1992**. For more information, contact Kevin Ryan — Conference Chairperson, AICS '92, Department of Computer Science and Information Systems, University of Limerick, Plassey Technological Park, Limerick, Ireland PHONE: (353) 61-333644 FAX: (353) 61-330316.
- **Sixth International Conference on Symbolic and Logical Computing, October 15-16, 1992, Dakota State University** — Papers in any area of non-numeric programming are invited. Deadline for submissions is **March 1, 1992**. For further information, contact Eric Johnson, ICEBOL Director, 114 Beadle Hall, Dakota State University, Madison, SD 57042 (BITNET: ERIC@SDNET).

Conference

- **IMSL User Group North America Conference, May 13-15, 1992, Chicago, Ill.** — This year's conference theme is "Scientific Visualization & Numerical Computing." For more information, contact: IMSL User Group Liaison, P.O. Box 4650, Houston, TX 77210-4605 PHONE: (713) 242-6776 FAX: (713) 242-9799 E-Mail: uunet!imsl!lpotratz ■

F-Prot Becomes Campus Standard for PC Virus Protection

By Eric Lipscomb, ACS General Access Lab Manager (BITNET: LIPS@UNTVAX)

In December 1991, the F-prot anti-viral software package that has been in use in various places on campus was adopted as the campus standard for virus prevention. The Microcomputer Maintenance Shop purchased 3,500 copies of the program for use on all PCs installed on campus and will distribute an installed copy on all new or refurbished PCs they deliver. Both the Microcomputer Maintenance Shop and Microcomputer and Network Support will be distributing the software to existing computers on campus. When responding to trouble calls, the Microcomputer Maintenance Shop will install the software with the customer's permission on computers that do not already have the software or will leave a disk with the customer. Microcomputer and Network Support members will also install F-Prot on PCs that do not have the software for each trouble call they respond to, again with the customer's permission. Microcomputer and Network Support is currently researching ways to distribute the software to other PC users.

The F-Prot program consists of two main parts. The first is a memory-resident utility that examines each program for virus infection as it loads. The second part is a menu-driven scanning and disinfecting utility that also contains information about the viruses themselves. This program has been tested against several known viruses on computers here at UNT and identified all of those viruses and removed most of them with ease. This software is currently in use in most of the General Access Computer Labs on campus as well.

F-Prot is licensed so that individuals may take the software and install it on their computers at home at no cost. People who transport any amount of data between their computers at home and at work are strongly suggested to install the software at home, as this is how several viruses are suspected to have arrived on campus. Individuals can get F-prot on diskette by bringing a diskette to Microcomputer and Network Support or the Academic Computing General Access Lab in ISB 110. A set of installation instructions are available at those locations.

Faculty and staff who have questions about F-Prot can contact Microcomputer and Network Support. Students with questions can contact Eric Lipscomb through the Academic Computing General Access Lab. ■

Pioneer Computer Scientist Dies

Rear Admiral Grace Murray Hopper died in her sleep in her Arlington, Virginia home on January 1, 1992. She was 85 years old.

Admiral Hopper was the "third programmer on the first computer in the United States." She worked on the first large-scale digital computer, the Mark I while serving in the Navy during WWII. She remained with computers after her discharge from the Navy, working with the Mark II and III at Harvard. In 1949 she joined Eckert-Mauchly Computer Corp. (later named Sperry-Univac), which was building UNIVAC I. In 1951 she discovered the first computer "bug," a moth, inside the UNIVAC I and pasted it into the logbook. She was also the "progenitor" of COBOL. She retired from Sperry-UNIVAC in 1971. She was recalled to active duty with the Navy in 1967 and retired from that in 1986. She was once quoted as saying "I seem to do a lot of retiring." Another famous Hopper quote: "Life was simple before World War II. After that we had Systems." Farewell, Grace, we'll miss you. ■

Changes to Apple Reseller Program at UNT

By Chuck Fuller, Associate Director of Business Services

Several changes have been made to the Apple Computer resale program at the University Store. The program basically falls into two areas: (1) Sales to Students, Faculty and Staff and (2) Sales to Departments.

Individuals have been able to purchase Apple Macintosh and related equipment for some time from the University Store. The price is cost plus a small order charge. In order to keep the cost as low as possible, the University Store does not keep any of these systems in stock. Rather, they are ordered at the time of sale. Almost all Apple equipment is available through this program. Potential customers should contact Pro Systems at 382-0038 for systems and ordering information. Pro Systems will provide customer support and assistance for all interested Students, Faculty and Staff.

Departments may place orders through the contract acquisition channels, or from the University Store's stocking program. If the Department has the appropriate local funds, they may be able to purchase from the University Store for immediate delivery. A limited number of systems are held in inventory for such purposes. Pricing on these systems is cost plus a ten to fifteen percent markup to offset the carrying costs of the inventory and higher administrative expense. Please check with the University Store concerning existing inventory and other details. ■

WP Hearing Impaired Customer Support

Hearing impaired customers can now contact WordPerfect Corp. via TDD and TTY by calling (801) 222-6050. ■

A First Look at DOS 5, Part III: The Undiscovered Country

By Eric Lipscomb, ACS General Access Lab Manager (BITNET: LIPS@UNTVAX)

At the end of the last article, we saw how to configure DOS to use the High Memory Area (HMA) to make more conventional memory available by loading DOS into the HMA. In this article, we'll look into using features of DOS 5 to manage extended and expanded memory and the Upper Memory Area (UMA).

EMM386.EXE

People with 386 or 486 computers can use EMM386.EXE to manage the UMA and to emulate expanded memory on those computers. The UMA is the memory address region between 640K and 1 Megabyte. Most 386 and 486 computers have the ability to place usable memory in this region, a utility such as EMM386 or QEMM is required to take advantage of it.

Because some hardware devices occupy various locations within the UMA, the memory that can be made available is divided into regions called Upper Memory Blocks (UMBs). These blocks can be used to store device drivers or other TSR programs. To take advantage of this memory area, the following lines need to be placed in your CONFIG.SYS file:

```
device=c:\dos\himem.sys
dos=high,umb
```

The HIMEM.SYS driver makes the HMA available, but also gives the operating system control of any extended memory in the computer. Using the line DOS=HIGH loads DOS into the HMA (as we saw from the last article). The ,UMB switch on the DOS= line gives DOS control over the UMA. One final line is needed to be able to use the UMA:

```
device=c:\dos\emm386.exe
```

This device driver gives DOS full control over the UMA as well as the ability to emulate expanded memory. If you only want to have control over the UMA and do not wish to emulate expanded memory, add the parameter NOEMS to the device line, like this:

```
device=c:\dos\emm386.exe noems
```

This will provide access to all available portions of the UMA without providing any expanded memory emulation. If you want to emulate expanded memory, however, you would use the RAM parameter in place of the NOEMS parameter in a device line like this:

```
device=c:\dos\emm386.exe 1024 ram
```

This line will provide access to the UMA and convert 1024K (1 megabyte) of the computer's extended memory to expanded memory.

Note: do not use EMM386 if you are already using another expanded memory manager. More than likely, the other memory manager is performing functions similar to EMM386 making it unnecessary for you to use it, not to mention that the

two memory managers will be in conflict and cause erratic behavior or lock up your computer.

LOADHIGH and DEVICEHIGH

Now that you have access to the memory in the UMA, how can you use it? The LOADHIGH and DEVICEHIGH statements allow you to place device drivers and other memory resident utilities into the UMA.

DEVICEHIGH is used in the CONFIG.SYS file to load device drivers into upper memory. For example, if you have a mouse driver stored in a subdirectory called DRIVERS, the following line could be placed in CONFIG.SYS to load that driver into upper memory.

```
devicehigh=c:\drivers\mouse.sys
```

Other device drivers can be loaded in a similar manner.

LOADHIGH is used in AUTOEXEC.BAT or even at the DOS prompt to load memory-resident programs into upper memory. For example, loading the DOSKEY program into upper memory would require a statement like

```
loadhigh c:\dos\doskey.com
```

in AUTOEXEC.BAT or on the command line. If DOS can load the program into upper memory, it will do so, otherwise the program will be loaded in conventional memory.

Note: some device drivers and memory-resident programs may not function properly when loaded into upper memory and may cause your system to "hang." It is a good idea before changing your system configuration to make a bootable floppy diskette in case your computer encounters problems with some of the changes that you make.

Memory Information

DOS 5 provides a memory analysis utility called MEM.COM. The MEM

program gives quite a bit of information about conventional, upper, extended, and expanded memory usage in your computer. A sample output from the MEM command might look like this:

```
Conventional Memory :
Name          Size in Decimal      Size in Hex
MSDOS          15200      ( 14.8K)      3B60
QEMM386        1424      (  1.4K)       590
LOADHI         208      (  0.2K)       D0
LOADHI         160      (  0.2K)       A0
LOADHI         160      (  0.2K)       A0
LOADHI         160      (  0.2K)       A0
LOADHI         160      (  0.2K)       A0
LOADHI          96      (  0.1K)        60
COMMAND        2880      (  2.8K)       B40
CED             272      (  0.3K)       110
PDIPX          16080     ( 15.7K)      3ED0
LOADHI          7504     (  7.3K)      1D50
FREE            96      (  0.1K)        60
FREE            64      (  0.1K)        40
FREE            272      (  0.3K)       110
FREE            176      (  0.2K)       B0
FREE          610064     (595.8K)     94F10

Total FREE :      610672      (596.4K)

Total bytes available to programs :      610672      (596.4K)
Largest executable program size :      609744      (595.5K)

10141696 bytes total EMS memory
7372800 bytes free EMS memory

9830400 bytes total contiguous extended memory
0 bytes available contiguous extended memory
7372800 bytes available XMS memory
MS-DOS resident in High Memory Area
```

This example is from a PC using QEMM, which accounts for the LOADHI lines. In this output format, each item that DOS has loaded in memory is displayed showing how much memory it is occupying. If you are having trouble getting a particular item to load into upper memory, the MEM command will show you how large the item is when loaded into memory. You can also use MEM to see how large the memory blocks are in the UMA.

In general, the best approach to switching memory-resident programs into upper memory is to change them one at a time. Also, order of loading may make a difference in how many items can be loaded into upper memory.

Final Thoughts

This series of articles is by no means meant to be a complete exploration of DOS 5 or its memory management abilities. We have, however, examined a number of ways to improve your computer's memory usage with internal DOS support, something that was not possible before. These are tools you can use to streamline your system and make it more efficient to use.

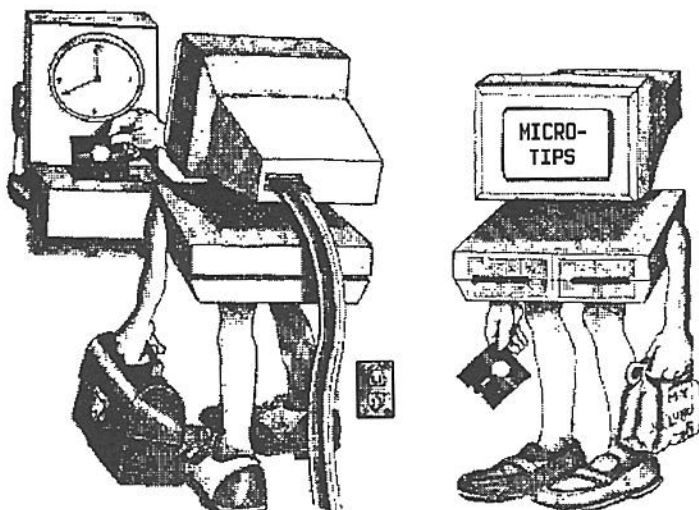
The DOS 5 manual has two very good chapters on optimizing and customizing your computer system using DOS 5. There are also a number of well-written books about DOS 5 and memory management that provide a good source of optimization information. None of these sources will tell you **how** your system should be configured, they will only show you the steps to follow to configure your own system, much the same as has been done here. The final decisions on your system's configuration is solely up to you. ■



Virus Update

Compiled by Claudia Lynch, *Benchmarks*
Editor (BITNET: AS04@UNTVM1)

- According to a blurb in the January 3, 1992 VIRUS-L Digest, Novell Inc. has inadvertently sent diskettes infected with the Stoned-3 virus to Novell Network customers. These diskettes are labelled "Network Support Encyclopedia - Standard Volume Update." The Novell part number for these disks is 883-001495-004. Infected diskettes were distributed from December 9-16, 1991.
- A dangerous trojan has been found on a BBS in Virginia (reported in the December issue of VIRUS-L Digest). It is a .ZIP file containing an executable file and a document file. The document file states that it is VOICE MASTER v 1.0, Written by Storm Shadow, Dec. 2nd 1990 (Last update June 1990). Beware, this program will attempt to overwrite the Boot Record, both FATs and a portion of the root directory.
- Kenneth R. van Wyk, Moderator of VIRUS-L/comp.virus has placed PC and MAC product reviews on cert.sei.cmu.edu (192.88.209.5). PC reviews are in pub/virus-1/docs/reviews/pc and MAC reviews are in pub/virus-1/docs/reviews/mac.
- The "official" anti-viral archives of VIRUS-L/comp.virus have been updated. One site for archives, accessible via anonymous ftp, is beach.gal.utexas.edu (129.109.1.207). IBM-PC archives can be found in the directory [/anonymous.pub.virus](http://anonymous.pub.virus) and MAC archives in [/anonymous.pub.virus.mac](http://anonymous.pub.virus.mac). For a complete list of sites, consult VIRUS-L Digest, Volume 4: Issue 232, available via anonymous ftp from cert.sei.cmu.edu (192.88.209.5) from pub/virus-1/archives. ■



*This column is intended to serve as a forum for sharing useful tips on making more productive use of microcomputers. If you have a tip that you feel may be of use to campus users, submit it to the **Benchmarks** Editor for possible inclusion in a future issue.*

The PC-SIG Library

By Cathy Hardy, Academic Database Consultant (BITNET: AC55@UNTVMI)

How do you buy software? Do you read the package and hope the program will fit your needs? Do you take a friend's recommendation? Do you buy a program that's on the current "top 10" list in some PC magazine? Or do you "try it on" in the store like a pair of shoes? Well, for the most part, software costs more than shoes! You walk in, and in most cases, buy it, then you find out that it's not what you thought it would be when you get it home. Unlike shoes, however, you usually can't take it back! Wouldn't it be better to try before you buy? And buy it directly from the author, rather than paying for the software, packaging, and the store's markup?

Well, welcome to the PC-SIG library of shareware. Bring your own disk, browse through over 2400 titles, pick a program or programs to try, take 'em home and give 'em a test spin. If you don't like it, try another, or write the author and let him/her know what you'd like changed.

What is shareware?

Shareware allows you to purchase software directly from the author. The authors feel that they have a program that they really want to share with people; they want people to try it, use it and enjoy it. Although most of the software in the PC-SIG library is shareware (a registration fee is required if you decide to keep it and use it), there are some public domain (free) programs. Each program will come with some documentation which will include a registration form and information about the program.

How do you decide on what to try?

There is a *PC-SIG Encyclopedia of Shareware* which lists and describes each disk in the PC-SIG library. Each entry will tell you such things as the program's system requirements, registration fees, and features of the program. There is a copy you may look through in the ACS General Access Lab in ISB 110 or you may find it in any large bookstore (the University Store carries it).

How to access the PC-SIG library at UNT

The PC-SIG library is accessible through different file servers on campus. If you are on the ACS, SCS lab, PON, or CC1 file server, you can access PC-SIG. More file servers will be adding access to PC-SIG shortly, so if PC-SIG is not an option on your server menu, ask your file server manager to add it! If your file server doesn't have access to PC-SIG (or if you aren't a file server user, or if you haven't a clue what a file server is), YOU STILL HAVE ACCESS TO PC-SIG in the ACS General Access Lab in ISB 110.

With that in mind, let's find some software to try . . .

(Don't forget to bring a formatted floppy disk or two, so you can take your shareware home.)

Here we are in ISB 110, sitting in front of the ACS menu (if you have any questions about this, ask the lab consultant). First, choose option **I - Other Software and Utilities** from the main menu. Next, choose **D - PC-SIG Catalog** from the "Other Software and Utility" screen. (If you are in your office on campus, go to your DOS prompt and type **PCSIG**). When you have attached to the PC-SIG catalog, you will get an initial "Welcome" screen telling you about PC-SIG. At the bottom is a message to strike a key when ready.

Main Menu

When you press a key, the PC-SIG Main Menu appears. This menu offers four options:

- A) View information on PC-SIG and this CD ROM
- B) Use WordCruncher to find program information
- C) View disk titles by program category
- D) Go to or copy a specific disk

You may choose A, C, or D (WordCruncher is not available on file servers).

If this is your first time to use PC-SIG, take the time to choose A to get information on PC-SIG, shareware, public domain software, and registration. When you have finished, press <ESC> to return to the Main Menu.

Copying a disk

Assuming you don't have the PKUNZIP program at home, let's copy it onto a floppy "ready to use." You'll need this program to expand the files you bring home from PC-SIG.

At the Main Menu, press <D> to copy a specific disk. This menu has three options:

- A) Exit the Copy-Access Program
- B) Go to a Disk on the CD-ROM
- C) Copy a disk from the CD-ROM for use

Usually you will choose B. If you choose C, the PC-SIG program will automatically "unzip" the file.¹

Choose C. When asked for a disk number, type in 1364.

Then you will be asked to enter a destination drive or directory. Put one of your formatted floppies in drive A: and type A:. PC-SIG will explode and ex-

pand each file on the 1364 disk. When it is finished, you will see the following message:

Press any key to continue copy access program

When you press a key, PC-SIG moves back to the previous menu (where you indicated the disk number and drive) and writes the expanded files to your floppy in drive A:. When finished, you will see a message which says:

Copy completed, press any key to continue . . .

Pressing a key here will back you out one more menu to the Copy Access menu where you can exit the copy access program, or copy another disk. Now let's find a program to copy . . .

Press <A> to exit the Copy-Access Program. Now you are back to the Main Menu. Choose C to look through the program categories available. Let's see.... what looks interesting? How about something in Home and Personal? Press <H>.

Something in Auto/Vehicle Management? Food and Drink Preparation? Health Management? Home Management? Movie/VCR/Music Databases? Let's look under Home Management. How about Home Applications (disk 321)? (Looking in the *Encyclopedia I* see that Home Applications includes a wide range of programs including one for guitar tuning, analysis of IRAs, picking against the NFL point spreads, a home inventory program, and more. Most disks contain the files for a single program, so we've hit an unusual one.) Press <ESC> to return to the previous menu, then press <A> to return to the Main Menu.

Copying a disk

At the Main Menu, press <D> again to copy a specific disk. Remember the three options?

- A) Exit the Copy-Access Program
- B) Go to a Disk on the CD-ROM
- C) Copy a disk from the CD-ROM for use

Now we want to choose B. We want to go directly to disk 321, copy the zipped file onto a floppy, take it home and unzip it.

You will be asked for a disk number. Type 321 and press <ENTER>.

Shortly, you will see a message:

.....
You are now in the disk subdirectory O:\321_400\DISK1364 for disk number 321.

Standard DOS commands will access program files in this subdirectory. If you wish to return to the Menu System type "CD/" and press Enter. This takes you to the root directory where typing "GO" and pressing Enter will start the Menu System.

.....
Please log out of ACS when you are finished with PC-SIG by typing PCSIGOFF at the DOS prompt. Thank you!

IMPORTANT: Be sure to log out when you are finished! If you don't, you will still be attached to PC-SIG. Only 30 people can be attached at a time. If you don't log out, you tie up one of the connections. If 29 other people don't log out, no one can use PC-SIG!

Change directories to the O: directory (type O: and press <ENTER>).

Put a floppy in drive A: and type: COPY *.* A:

This will copy the zip file in O:\321_400\DISK321 to your floppy.

When the file is finished being copied to your disk, you have two options:

If you want to copy another, type CD\ and press Enter to get to the O: root directory. Then type GO to get to the PC-SIG menu.

If you are finished, type PCSIGOFF. This will log you out of the PC-SIG library.

Now you can take your floppies home, unzip the files, and test the software. If you have questions (or comments) regarding PC-SIG at UNT, call Academic Computing Services at 565-2324. ■

¹To save space, the files on the CD-ROM are compressed. If you choose to copy a disk for use, PC-SIG is kind enough to expand and reconstruct the file. (This is fine for all programs if you are copying to your own PC's hard drive with plenty of room, but unfortunately, some won't fit on a single floppy. So, usually if you plan to "take it home," take it home "zipped.")

VAXCLUSTER USAGE STATISTICS

November Top Ten Programs: CPU Time Used

Program	Description	CPU Time	Percent of Total
1. GAUSSIAN	Molecular Modelling	7 11:34:42.69	41.9
2. User programs	Compiled Programs	4 20:12:38.20	27.1
3. NEWS	ANU News Utility	1 06:36:49.55	7.1
4. LOGINOUT	User Login	0 14:24:37.99	3.4
5. IRC	Internet Relay Chat	0 10:24:36.66	2.4
6. BACKUP	Disk Backups	0 08:40:36.89	2.0
7. MAIL_SERVER	VMS Mail Server	0 07:47:05.30	1.8
8. XZZZY	Chat Utility	0 07:21:50.06	1.7
9. MAIL	VMS Mail	0 07:00:49.81	1.6
10. DISKEEPER	Disk Optimizer	0 06:25:01.93	1.5

Total 17 20:52:38.30

November Top Ten Programs: Frequency of Runs

Program	Description	Number of Runs	Percent of Total
1. LOGINOUT	User login	269445	42.4
2. SET	VMS Utility	101335	15.9
3. DIRECTORY	VMS Utility	39714	6.2
4. DELETE	VMS Utility	34801	5.5
5. User programs	Compiled Programs	30409	4.8
6. SEND	BITNET message Utility	17177	2.7
7. SYSLOGIN	User Login	16784	2.6
8. MAIL_SERVER	VMS Mail Server	16041	2.5
9. MAIL	VMS Mail Utility	13298	2.1
10. TYPE	VMS Utility	10572	1.7

Total 63579

December Top Ten Programs: CPU Time Used

Program	Description	CPU Time	Percent of Total
1. GAUSSIAN	Molecular Modelling	10 12:58:22.19	58.5
2. User programs	Compiled Programs	3 12:51:00.17	19.6
3. NEWS	ANU News Utility	1 06:10:09.41	7.0
4. BACKUP	Disk Backups	0 11:35:37.21	2.7
5. LOGINOUT	User Login	0 07:47:44.96	1.8
6. IRC	Internet Relay Chat	0 06:39:43.74	1.5
7. MAIL_SERVER	VMS Mail Server	0 05:55:17.16	1.4
8. MAIL	VMS Mail	0 05:23:53.21	1.2
9. XZZZY	Chat Utility	0 03:25:00.79	0.8
10. ACC	Accounting Utility	0 02:33:35.74	0.6

Total 18 02:33:35.79

VAX/UNIX NEWS

VAX News

- **The following software upgrades have occurred** — BASIC has been upgraded to version 3.5. FORTRAN is now at version 5.7.
- **Software packages removed** — Datatrieve, CDD, and COBOL have all been removed.
- **UNIX-like grep installed** — UNIX-like grep, fgrep, and egrep have been installed on the VAX. Help is in **HELP GREP**. If you have questions regarding these, send them to **OPERATOR** via E-mail, or call 4161 during business hours.
- **Support Questions** — All VAX and Solbourne support questions should not be directed to an individual. They should be E-mailed to the "operator" account or asked directly by calling 565-4161. Following this procedure will lead to more accurate call routing and more consistent response time to questions. Using SEND, PHONE, WRITE, and TALK for questions is **HIGHLY** discouraged. The VAX/UNIX staff are often logged in when they are not on duty and are trying to do homework, etc. Also, it is not uncommon for them to be running something on the terminal that cannot be interrupted.

UNIX News

- **Solbourne Upgrades** — During the Christmas break the Solbourne OS was upgraded from OS/MP 4.1 to OS/MP 4.1A and then to OS/MP 4.1.A.1. In addition the X Window software was upgraded from X 1.1 to X 2.1. The only difference you are likely to notice from the 4.X upgrades is that the C compiler's optimization routines have been en-

December Top Ten Programs: Frequency of Runs

Program	Description	Number of Runs	Percent of Total
1. LOGINOUT	User login	138691	33.4
2. SET	VMS Utility	77753	18.7
3. DIRECTORY	VMS Utility	32146	7.7
4. DELETE	VMS Utility	26941	6.5
5. User programs	Compiled Programs	21620	5.2
6. MAIL_SERVER	VMS Mail Server	12439	3.0
7. SYSLOGIN	User Login	11692	2.8
8. SEND	BITNET message Utility	10551	2.5
9. MAIL	VMS Mail Utility	9688	2.3
10. TYPE	VMS Utility	9026	2.2
Total		415210	

SOLBOURNE USAGE STATISTICS

November Top Ten Programs: CPU Time Used

Program	Description	CPU Minutes	Percent of Total
1. 19999.es	User Program	10417.4	30.2
2. g90	Gaussian 90	6499.8	18.8
3. wod2b	User Program	3445.7	10.0
4. wod2a	User Program	3347.9	9.7
5. wod2c	User Program	2819.4	8.2
6. nntpd	USENET News Xmit Daemon	639.5	1.9
7. find	UserProgram	565.6	1.6
8. in.telne	User Program	392.1	1.1
9. relaynew	User Program	385.0	1.1
10. 11002.ex	User Program	321.7	0.9
Total		28834.1	

November Top Ten Programs: Run Time Used

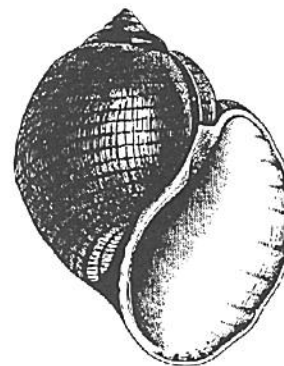
Program	Description	Number of Runs	Percent of Total
1. sh	Bourne Shell	242956	19.7
2. relaynew	User Program	106992	8.7
3. grep	File Search Utility	51756	4.2
4. egrep	File Search Utility	49506	4.0
5. tr	User Program	40807	3.3
6. sort	File Sorting Utility	39790	3.2
7. tail	UserProgram	38612	3.1
8. expr	Expression Evaluator	38335	3.1
9. rm	Delete File	36028	2.9
10. awk	Text Processing Language	32234	2.6
Total		581016	

hanced. There have been many small changes to the X Window system in the new release, but the most obvious one is that the Motif emulation has been improved and now conforms more correctly to Motif standards. Also during this period, many small changes have been made to the layout of files in the system. Please watch the login messages as you log in over the next 2-3 weeks for details which might be of concern to you. Further information will be posted there and in the newsgroup `unt.general` as it becomes available. If you experience any problems while working on the Solbourne, please don't hesitate to call a system operator at (817) 565-4161 or send E-mail to `operator`.

- **Math libraries available** — In response to many user requests, Academic Computing Services has purchased the IMSL Math and Statistical Libraries v2.0 for FORTRAN under UNIX. These libraries are available to all Solbourne users and should be closely compatible with their v2.0 counterparts on our MVS system. Users may call IMSL library functions within their FORTRAN programs by adding the `-limsl` option to their `f77` command line. Documentation is currently available only by contacting Academic Computing Services at (817) 565-2324 and asking for information about "IMSL on the Solbourne."
- **BITNET Mail Addresses** — All mail directed to BITNET sites must be addressed by hand as follows. If you are trying to send mail to a BITNET address such as `user@host.bitnet`, when prompted for a destination address, enter `user%host.bitnet@ricevm1.rice.edu`. This will route the mail through the Internet to a BITNET gateway maintained through the generous auspices of Rice University. No automatic address conversions are done locally at this time.
- **Support Questions** — All VAX and Solbourne support questions should

December Top Ten Programs: CPU Time Used

Program	Description	CPU Minutes	Percent of Total
1. g90	Gaussian 90	7033.2	39.6
2. 19999.es	User Program	3911.2	22.0
3. perl	Perl Language Interpreter	1141.3	6.4
4. fig10	User Program	599.6	3.4
5. fig2	User Program	475.3	2.7
6. i2	User Program	458.3	2.6
7. find	UserProgram	286.2	1.6
8. nntpd	USENET News Xmit Daemon	249.8	1.4
9. csh	C Shell	200.2	1.1
10. relaynew	User Program	176.3	1.0
Total		145314.4	



The UNIX Shell

By Marc St.-Gil, UNIX Systems Programmer (mstgil@sol.acs.unt.edu)

December Top Ten Programs: Frequency of Runs

Program	Description	Runs	Percent of Total
1. sh	Bourne Shell	70338	13.8
2. snmpget	User Program	30500	6.0
3. ls	Directory	29295	5.8
4. egrep	File Search Utility	26291	5.2
5. tr	User Program	24415	4.8
6. sort	File Sorting Utility	23890	4.7
7. tail	UserProgram	22772	4.5
8. expr	Expression Evaluator	22408	4.4
9. csh	C Shell	21751	4.3
10. is_able	Permissions Checker	16857	3.3
Total		288517	

Hello! And welcome back to The UNIX Shell. This month's column is for our SAS users.

Those of you who have been using SAS on the Solbourne from a "character based" terminal may have run into difficulties where the window borders seem to disappear and your cursor is placed in the middle of the screen at no apparent prompt. This is a bug in SAS that depends on a terminal feature called "line wrap" being both available and turned on. The window and prompt are there, but they are "invisible" which means that if you type the **endsas** command before you press any keys which move the cursor, SAS will exit normally. It is not recommended that you try to use SAS while this bug is affecting your terminal. If you are using a version of the CUTCP Telnet package distributed by the Computing Center, it is not likely that you will have this problem because we distribute it set up to have "line wrap" on by default. If you are using some other package (i.e. Kermit, Procomm, etc.) this may not be the case. If you are experiencing the symptoms described above, check the status of "line wrap" in your terminal software.

In Kermit, press <CTRL-]> (hold down the <CTRL> key and while holding it, press the <]> key) then press <C> to get to the "MS-Kermit" prompt. Then use the command "show

not be directed to an individual. They should be E-mailed to the "operator" account or asked directly by calling 565-4161. Following this procedure will lead to more accurate call routing and more consistent response time to questions. Using SEND, PHONE, WRITE, and TALK for questions is **HIGHLY** discouraged. The VAX/UNIX staff are often logged in when they are not on duty and are trying to do homework, etc. Also, it is not uncommon for them to be running something on the terminal that cannot be interrupted.

- **Mathematica installed** — Mathematica has been installed on the Solbourne. It is only a six user license,

so only six people may be running it at the same time. To start Mathematica, just type **math**. It supports ASCII, X Window, Mac frontend, and NeXt frontend interfaces. Academic Computing Services supports the running on Macintoshes, but does not consult on its usage (e.g., how to write Mathematica programs, how to enter certain functions). A manual on Mathematica is available in the ISB 110 ACS General Access Lab. If you would like to have your own copy of the manual, it is called *Mathematica: A System for Doing Mathematics by Computer* by Stephen Wolfram. ■

terminal" to display your current terminal settings. Look for an entry titled "Term wrap-lines:". If it says "on," then this is probably not the trouble. (See Getting More Help at the end of this column.) If it says "off," then this is probably the trouble. Enter the command **set terminal wrap on** to set "line wrap" to on. Then enter the command **connect** to re-connect to your UNIX session.

In Procomm 2.4.2, use <Alt-S> to get to the setup-menus, then press <2> <RETURN> for terminal setup. Look at item 8. If it says "ON," then this is probably not the trouble. (See "Getting More Help" at the end of this column.) If it says "OFF," then this is probably the trouble. Press <space><RETURN> to change the "line wrap" mode and press <space><RETURN> to change from "OFF" to "ON". Finally press <ESC> and <ESC> again to return to your UNIX session.

In Procomm Plus, use <Alt-S> to get to the setup-menus, then use the "down arrow" key to move to the line that says **Terminal Options** and press <RETURN> for terminal setup. Look at item E. If it says "ON," then this is probably not the trouble. (See "Getting More Help" at the end of this column.) If it says "OFF," then this is probably the trouble. Press <E><RETURN> to change to "line wrap" mode and press <space><RETURN> to change from "OFF" to "ON". Finally, press <ESC> <ESC> to return to your UNIX session.

Now try running SAS again and see if it looks "right." If so, you may want to save your setup. If not, then ask for more help in one of the ways listed below.

Getting More Help

You may call a system operator for assistance at (817)565-4161, or send E-mail to **operator**, or come by Academic Computing Services in the Information Sciences Building (ISB) room 119. Also on the inside front cover of this newsletter is a list of places to call for help with many subjects. ■

SAS and Your Disk Quota

By Marc St. Gil, UNIX Systems Programmer (Internet: mstgil@sol.acs.unt.edu)

We have been experiencing system problems due to the /tmp filesystem overflowing. This has been traced back to SAS crashing and leaving large temporary files in /tmp. In order to avoid this problem, until more disk space is available to devote to a scratch partition, SAS has been directed to keep its temporary files in a subdirectory of your home directory. This subdirectory is named **sastmp**. As a result, you will find that running SAS is more likely to exceed your disk quota. If your SAS jobs suddenly begin to fail and you get messages to the effect of your disk quota being exhausted, please contact a system operator (by E-mail to **operator** or by phoning campus extension 4161) and report your problem and userid to them. You should get a quota extension within 24 hours of your request. We are sorry if this causes any inconvenience, but until our new disk drives arrive we have no other choice. Thank you for your understanding and cooperation in this matter. ■

Beware of Chain Letters

By Claudia Lynch, *Benchmarks* Editor (BITNET: AS04@UNTVM1)

Chain letters are spreading through the networks again, wreaking havoc on disk space, taking up people's valuable time, and causing all sorts of other annoying side effects. Two recent letters that have been making the rounds on the Internet and BITNET are the "expensive cookie" recipe — an urban legend transplanted to the net, and the "Give Croatia A Chance" letter. Other letters that have been seen recently are those of the usual "send this or you'll have bad luck" variety.

Chain letters are expressly against the policies of CREN (BITNET) and many universities, including UNT. If you receive a chain letter, delete it and notify your system manager(s) that you received that type of mail. It is possible to lose your networking and/or computing privileges by sending chain letters. Following is an excerpt from the CREN Acceptable Use Policy statement:

"Chain letter," "broadcasting" messages to lists or individuals, and other types of use which would cause congestion of the networks or otherwise interfere with the work of others are not allowed.

In the case of the "Croatia" letter, the sender seems to have good intentions, but should not present the message in chain form. Posting to mailing lists and newsgroups is the correct way to inform network users of such information. ■

Best of The BBS No Longer a Feature

By Claudia Lynch, *Benchmarks* Editor (BITNET: AS04@UNTVM1)

Due to lack of activity, the "Best of the BBS" column will no longer be a regular feature of *Benchmarks*. If, at some time in the future, activity picks up again, we will consider reinstating it. Thank all you BBSers for your contributions in the past. ■

MAINFRAME TECHNICAL SERVICES

Mainframe Performance Statistics

Operating Systems Performance Statistics for November

CPU	SYSTEM	Planned Production Hours	Production Hours Achieved	System Uptime
ACAD	VM/XA	720.00	720.00	98.1%
ACAD	MUSIC/SP	701.59	701.59	97.4%
ACAD	MVS/JES2	720.00	720.00	97.8%
ACAD	COMPLETA	710.38	710.38	97.7%
ADMN	MVS/JES2	720.00	714.27	99.2%
ADMN	COMPLETA	267.00	266.73	99.9%
ADMN	ADABASA	683.07	674.85	98.8%

Operating Systems Performance Statistics for December

CPU	SYSTEM	Planned Production Hours	Production Hours Achieved	System Uptime
ACAD	VM/XA	744.00	739.52	99.4%
ACAD	MUSIC/SP	723.33	718.65	99.4%
ACAD	MVS/JES2	744.00	738.72	99.3%
ACAD	COMPLETA	734.17	728.82	99.3%
ADMN	MVS/JES2	739.77	734.76	99.3%
ADMN	COMPLETA	283.00	280.33	99.1%
ADMN	ADABASA	710.96	696.66	98.0%

- The ACAD CPU achieved 100% uptime in November and 99.4% uptime in December. The HDS/7360 DASD achieved 100% uptime in November & December. The HDS/7380 DASD achieved 100% uptime in November & December.
- The ADMN CPU achieved 100% uptime in November & December. The HDS/7360 DASD achieved 100% uptime in November & December. The HDS/7380 DASD achieved 100% uptime in November & December. The EMC Solid State Disk achieved 100% uptime in November & December. ■

Key Causes Of Lost Productivity In October: ADMN CPU

MPU, Tape, and Disk Subsystems (HDS)

- | | |
|---|-------------------|
| 1. Preventive maintenance on 8083 MPU and DASD. | 3.57 HOURS |
| 2. De-Installation of a 7360 DASD String. | <u>1.35</u> |
| TOTAL | 4.92 HOURS |

Miscellaneous

- | | |
|--|---------------------------|
| 1. DASD file maintenance on ADABASA. | 8.23 HOURS |
| 2. Undetermined causes for systems restarts. | 3.54 |
| 3. MVS/SP systems software development. | <u>2.87</u> |
| TOTAL | <u>14.64</u> HOURS |
| GRAND TOTAL | 19.56 HOURS ■ |

Key Causes Of Lost Productivity In November: ACAD CPU

Miscellaneous

- | | |
|--|--------------------|
| 1. VM/XA systems software development. | 11.42 HOURS |
| 2. Emergency shutdown of ACAD mainframe system due to failure of air conditioning during teleregistration sessions on ADMN System. | 4.14 |
| 3. Extended delay in re-start of MUSIC due to operator error in processing MUSIC back-up. | 3.71 |
| 4. Undetermined causes for systems restarts. | <u>0.83</u> |
| TOTAL | 20.10 HOURS |

Key Causes Of Lost Productivity In November: ADMN CPU

Miscellaneous

- | | |
|---|-------------------|
| 1. Install of leased communication lines on the NCR 3690 Terminal controller. | 3.70 HOURS |
| 2. ADABASA DASD file maintenance. | 1.80 |
| 3. MVS/SP systems software development. | |
| 3. Undetermined causes for systems restarts. | <u>0.97</u> |
| TOTAL | 8.22 HOURS |

Key Causes Of Lost Productivity In December: ACAD CPU

MPU, Tape, and Disk Subsystems (HDS)

- | | |
|---|-------------------|
| 1. Component failure in 8083 CPU 1 Processor. | <u>5.35 HOURS</u> |
|---|-------------------|

MAINFRAME TECHNICAL SERVICES

ACADemic (HDS) Program Hit Parade

November Top Ten Programs : Frequency Of Runs

Program	Description	#of Runs	% of Total
1. PGM=*.DD	Compiled Program	14400	21.4
2. IEWL	Linkage Editor	12641	18.7
3. IGYCRCTL	VS COBOL2 Compiler	7928	11.8
4. SPCHLCOB	COBOL 2 Report Writer	7574	11.2
5. IEBGENER	IBM Utility	6481	9.6
6. SASLPA	SAS Version 5.18	3064	4.5
7. IDCAMS	VSAM Utility	3045	4.5
8. ADARUN	ADABAS Utility Module	2394	3.5
9. IEFBR14	IBM Null Utility	1614	2.4
10. SPSS	SPSS Version 4.0	1176	1.7

November Top Ten Programs: CPU Seconds Used

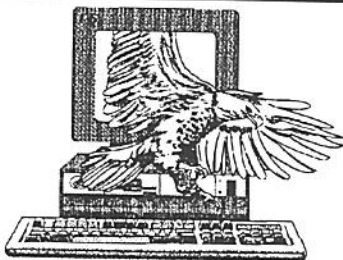
Program	Description	CPU Seconds	% of Total
1. PGM=*.DD	Compiled Program	66569	30.2
2. SASLPA	SAS Version 5.18	37609	17.1
3. SPCHLCOB	COBOL 2 Report Writer	31862	14.4
4. COMPLET4	Academic COM-LETE	29375	13.3
5. SPSS	SPSS Version 4.0	9228	4.2
6. IGYCRCTL	VS COBOL2 Compiler	8703	3.9
7. SS4001	Operations Automation	7274	3.3
8. ADARUN	ADABAS Utility Module	6608	3.0
9. IEWL	Linkage Editor	5125	2.3
10. SAS370	SAS Version 6.06	4825	2.2

December Top Ten Programs : Frequency Of Runs

Program	Description	#of Runs	% of Total
1. PGM=*.DD	Compiled Program	7912	19.7
2. IDCAMS	VSAM Utility	7346	18.3
3. IEWL	Linkage Editor	6984	17.4
4. IGYCRCTL	VS COBOL2 Compiler	4000	9.9
5. IEBGENER	IBM Utility	2752	6.8
6. SPCHLCOB	COBOL 2 Report Writer	2468	6.1
7. IKFCBL00	VS COBOL Compiler	1524	3.8
8. SASLPA	SAS Version 5.18	1466	3.6
9. ADARUN	ADABAS Utility Module	1263	3.1
10. SPSS	SPSS Version 4.0	1158	2.9

December Top Ten Programs: CPU Seconds Used

Program	Description	CPU Seconds	% of Total
1. PGM=*.DD	Compiled Program	55224	31.4
2. COMPLET4	Academic COM-LETE	40348	23.0
3. SASLPA	SAS Version 5.18	33029	18.8
4. SPSS	SPSS Version 4.0	9801	5.6
5. SPCHLCOB	COBOL2 Report Writer	8529	4.9
6. ADARUN	ADABAS Utility Module	8209	4.7
7. IGYCRCTL	VS COBOL2 Compiler	4208	2.4
8. SAS370	SAS Version 6.06	3626	2.1
9. IDCAMS	VSAM Utility	2513	1.4
10. IEWL	Linkage Editor	2024	1.2



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Computing Center Short Course Registration Form

Please complete this form and return it AS SOON AS POSSIBLE if you wish to attend any of the short courses listed below. You may also register over the phone by calling (817) 565-2324. **FACULTY AND STUDENTS HAVE FIRST PRIORITY TO REGISTER FOR THESE CLASSES. A VALID USER-ID IS REQUIRED FOR CLASSES MARKED WITH AN ASTERISK (*).** Academic Computing Services reserves the right to cancel ANY course that has 5 people or less registered 3 days before the date of the course.

NAME: _____

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DEPT: _____

UNDERGRADUATE ____ GRADUATE ____

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Staff: SUPERVISOR SIGNATURE: _____

I wish to attend:

- **Introduction to IBM JCL (ISB 123):**

____ Tuesday, February 11: 3:00-5:00 p.m.

- **Intro. to the Internet (TBA):**

____ Tuesday, February 25: 3:30-5:00 p.m.

- **Introduction to UNIX (ISB 110)*:**

____ Thursday, February 20: 3:00-5:00 p.m.

- **Intro. to SAS on UNIX (ISB 110)*:**

____ Monday, February 17: 4:00-5:00 p.m.

- **Intro. to VAX/VMS (ISB 110)*:**

____ Tuesday, February 18: 3:00-5:00 p.m.

- **Intro. to SAS on CMS (ISB 110)*:**

____ Tuesday, February 4: 3:00-4:00 p.m.

- **Intro. to SPSS (ISB 110):**

____ Wednesday, February 5: 1:00-4:00 p.m.

- **Introduction to CMS (ISB 110)*:**

____ Tuesday, January 28: 3:00-5:00 p.m.

____ Wednesday, February 19: 10:00 a.m.-Noon

- **Intro. to Macintosh: Students (ISB 110):**

____ Monday, February 3: 3:00-5:00 p.m.

- **Intro. to WP 5.1 for Students (ISB 110):**

____ Tuesday, February 11: 2:00-5:00 p.m.

- **Intro. to Procomm+ (ISB 123):**

____ Wednesday, February 5: 3:00-4:00 pm

- **Introduction to BITNET (TBA):**

____ Monday, February 24: 3:00-5:00 p.m.

- **Introduction to vi (ISB 110)*:**

____ Monday, February 24: 4:00-5:00 p.m.

- **Introduction to USENET (ISB 123):**

____ Tuesday, February 13: 4:00-5:00 p.m.

- **Intro. to SAS (ISB 110)*:**

____ Thursday, January 30: 2:00-4:00 p.m.

- **Intro. to SAS PC (ISB 110):**

____ Monday, February 10: 4:00-4:00 p.m.

- **Intro. to SPSS PC+ (ISB 110):**

____ Tuesday, February 13: 2:00-5:00 p.m.

- **Intro. to Micro. Labs (ISB 110):**

____ Tuesday, January 28: 10:00-11:00 a.m.

____ Wednesday, January 29: 3:00-4:00 p.m.

- **Intro. to DOS: Students (ISB 110):**

____ Wednesday, February 12: 2:00-4:00 pm

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